

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DAVID S. WARDROP, MICHAEL SEXSMITH and RUSSELL H. BARTON

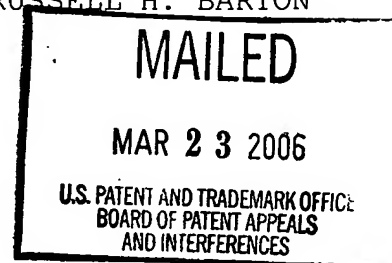
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Appeal No. 2006-0587  
Application No. 10/017,483

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ON BRIEF

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Before GARRIS, WARREN and KRATZ, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal which involves claims 1-7 and 9.<sup>1</sup>

The subject matter on appeal relates to a fuel stack assembly for providing power to a working load. With reference to the appellants' drawing, the assembly comprises a first set of fuel cells 14, a first threshold detector 24, a first transistor

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<sup>1</sup>On page 3 of the brief, the appellants "request consideration of [non-elected species] claim 8 should claim 1 be found allowable." However, it is the Examining Corps., not the Board, to which such a request must be presented. See the Manual of Patent Examining Procedure (MPEP), § 806.04 et seq. and § 821.04 (Rev. 3, August 2005). Therefore, we will not further comment upon this aspect of the appellants' brief.

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26 coupled for activation via the first threshold detector, and a first dump load 22 "wherein the first transistor is responsive to the stack terminal voltage across the first set of fuel cells to selectively couple the first dump load in parallel with the first set of fuel cells when the stacked terminal voltage across the first set of solid polymer electrochemical fuel cells exceeds a threshold voltage and to uncouple the first dump load when the stack terminal voltage across the first set of solid polymer electrochemical fuel cells is below the threshold voltage" (claim 1). This appealed subject matter is adequately represented by claim 1, the sole independent claim on appeal, a copy of which is set forth in Appendix A of the appellants' brief.

The references set forth below are relied upon by the examiner as evidence of obviousness:

Keller et al. (Keller)	3,850,695	Nov. 26, 1974
Meltser et al. (Meltser)	EP 0 982 788 A2	Mar. 1, 2000
(Published European Patent Office Patent Application)		

All of the appealed claims are rejected under 35 U.S.C. § 103(a) as being unpatentable over Keller in view of Meltser.

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We refer to the brief and to the answer respectively for a thorough exposition of the opposing viewpoints expressed by the appellants and by the examiner concerning the above noted rejection.

#### OPINION

For the reasons which follow, this rejection cannot be sustained.

The examiner's exposition of his rejection inappropriately fails to specifically identify the individual features recited in appealed independent claim 1 which he regards as corresponding to or differing from the fuel cell assembly of Keller. For example, after describing aspects of Keller's assembly (though without identifying specific claim 1 requirements these aspects are thought to satisfy), the examiner states that Keller does not "expressly disclose . . . the specific load-resistor response." (Answer, page 6). Presumably, this "load-resistor response" (id.) relates to some feature of the appellants' claimed invention, although the aforequoted phraseology is not recited in any of the appealed claims.

Notwithstanding this lack of clarity on the examiner's part, the appeal record as a whole and the "**Response to Argument**" section of the answer in particular reflect that the examiner

considers the "first dump load" requirement of appealed claim 1 as satisfied by patentee's electric motor 7 which powers pump 8 to thereby transfer fuel from tank 9 to fuel cell battery 2 (see Keller's drawing). The record also reflects that the claim 1 requirement "wherein the first transistor is responsive to the stack terminal voltage across the first set of fuel cells to selectively couple the first dump load in parallel with the first set of fuel cells when the stack terminal voltage . . . exceeds a threshold voltage . . . " is regarded by the examiner as distinguishing from and in fact opposite to Keller's system wherein the electric motor (cf., the hereclaimed first dump load) is "coupled" when the stack terminal voltage is below, rather than exceeds as here claimed, a threshold voltage.

With further regard to this matter, patentee's electric motor is activated when the voltage under regulation falls below a fixed value to thereby initiate pump 8 thus transferring fuel to fuel cell battery 2 whereby additional voltage is supplied to load circuit 1. See Keller, for example, at lines 4-13 in column 1, from line 55 in column 1 through line 5 in column 3, and especially the sentence bridging columns 2 and 3. As previously indicated, this aspect of Keller's system is referred to by the

examiner as a "load-resistor response" and is recognized by the examiner as being opposite to the previously quoted feature recited in the last clause of claim 1.

In the paragraph bridging pages 7 and 8 of the answer, the examiner presents the following obviousness position in an attempt to account for this claim 1 distinction:

With respect to the specific load-resistor response, it would have been obvious to one skilled in the art at the time the invention was made to reverse the specific load-resistor response of the fuel cell system of Keller et al because Keller et al themselves disclose coupling a load to the fuel cell stack when the output voltage falls below the threshold value and thus, uncoupling the load from the fuel cell stack when the output voltage exceeds the threshold value and therefore, one of ordinary skill would envision that such opposite functionality could be an obvious variation of the claimed invention as it will only be necessary to reset the fuel cell control system parameter to operate in an opposite fashion to satisfy the claimed requirement. Thus, it is within the level of ordinary engineering skill to reverse a function or adjust a controlling signal for responding to an opposite criteria or parameter.

For multiple reasons more fully detailed in the brief, the examiner's above quoted obviousness conclusion is without perceptible merit.

In the first place, there is no prior art support whatsoever for the examiner's conclusion that it would have been obvious "to reverse the specific load-resistor response of the fuel cell system of Keller" (answer, page 7). On the record before us, it

is only the appellants' own disclosure which contains any teaching or suggestion for such a modification. This fact implies that the examiner's obviousness conclusion has been improperly derived based on impermissible hindsight. See W.L. Gore & Assocs., Inc. v. Garlock, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. (1984). Moreover, this implication of hindsight is reinforced by the examiner's statement that "one of ordinary skill would envision that such opposite functionality could be an obvious variation of the claimed invention as it will only be necessary to reset the fuel cell control system parameter to operate in an opposite fashion to satisfy the claimed requirement" (answer, pages 7-8). Indisputably, it is only via hindsight knowledge of the appellants' disclosure including the appealed claims that an artisan "would envision that such opposite functionality could be an obvious variation of the claimed invention" (id.).

In addition, it is appropriate to reiterate the appellants' well taken point that established legal precedence vitiates the examiner's apparent position that his obviousness conclusion is supported by the fact that his proposed opposite functionality "could be an obvious variation" (id.). The fact that the prior art could be modified to produce a claimed

invention is inadequate, by itself, to establish obviousness for the modification. See In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992) and In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Finally, we also reiterate the appellants' correct observation that "the modification suggested by the Examiner would render the Keller device inoperable . . . because the motor would be electrically coupled to the fuel cell stack whenever the bus voltage was above the threshold voltage, thereby increasing the supply of fuel and further increasing the bus voltage . . . , ultimately resulting in catastrophic runaway" (brief, pages 12-13). In response, the examiner urges that his proposed modification to Keller "would not result in such catastrophic runaway of the system as argued by the applicants because if serious, significant or a large number of unsatisfactory problems were readily apparent, the prior art would have reported or addressed them" (answer, page 9). However, such problems certainly would not have been "reported or addressed" by the prior art reference to Keller since it is the examiner, not Keller, who has suggested the modification which would have resulted in a catastrophic runaway problem.

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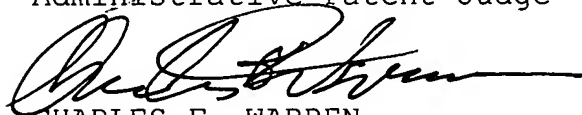
We need not further belabor the several deficiencies of the examiner's rejection. For any one of the multiple reasons discussed above, it is apparent that the examiner has failed to establish a prima facie case of obviousness with respect to the subject matter defined by appealed independent claim 1. It follows that we cannot sustain the examiner's Section 103 rejection of claim 1 or of claims 2-7 and 9 which depend therefrom as being unpatentable over Keller in view of Meltser.

The decision of the examiner is reversed.

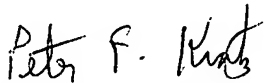
REVERSED



BRADLEY R. GARRIS  
Administrative Patent Judge



CHARLES F. WARREN  
Administrative Patent Judge



PETER F. KRATZ  
Administrative Patent Judge

BOARD OF PATENT  
APPEALS AND  
INTERFERENCES

BRG:hh



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